

Date: Tuesday, 2/7/2006 12:13:02 PM  
 User: Linda Lacelle

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : WEARPLATE
<b>Job Number</b> : 25725	
<b>Estimate Number</b> : 10741	
<b>P.O. Number</b> : N/A	<b>Part Number</b> : D33151
<b>This Issue</b> : 2/7/2006 <b>S.O. No.</b> : N/A	<b>Drawing Number</b> : D3315 REV. PRELIM
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : N/A <b>Type</b> : PURCHASED PARTS	<b>Drawing Revision</b> : A B 05.03.03 RH
<b>Previous Run</b> : 24702	<b>Material</b> : N/A
<b>Written By</b> : SRR COMMENT BELOW	<b>Due Date</b> : 2/14/2006
<b>Checked &amp; Approved By</b> : [Signature]	<b>Qty</b> : 5
<b>Comment</b> : Est: A 05.05.12 New issue KJ/JLM	<b>Um</b> : 10 <b>Each</b> : 5

Seq. #:	Machine Or Operation:	Description :
1.0	PG	PURCHASING
<b>Comment:</b> PURCHASING Issue P/O: 00000521 Email or Ship DXF file to vendor Laser Cut flat pattern per Dwg D3315 Possible Supplier: Industrial Laser Material release note is required		
2.0	D33151F	Wearplate, LH Fwd
<b>Comment:</b> Qty.: 1.0000 Each(s)/Unit Total : 10.0000 Each(s) WEARPLATE LH FWD		
3.0	PACKAGING 1	PACKAGING RESOURCE #1
<b>Comment:</b> PACKAGING RESOURCE #1 Recieve & Inspect for Transit Damage Ensure Material Release Note is attached		
4.0	QC6	DIMENSIONAL CHECK
<b>Comment:</b> DIMENSIONAL CHECK Inspect dimensions as per inspection template D3315-1T2		
5.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
<b>Comment:</b> SMALL & MEDIUM FAB RESOURCE 1 Deburr if necessary		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: ☒ Date: 06/03/09  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
06/03/09	6	One Scrap Bent wrong way	VB KAPD	Destroy	06/03/09		VB KAPD	VF

NOTE: Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: WEARPLATE

Job Number: 25725

Part Number: D33151

Job Number:



Seq. #:

Machine Or Operation:

Description:

6.0

BRAKE NC

NC BRAKE



Comment: NC BRAKE

1- Form using DT8751 Die as per Dwg D3315 Rev: B

2- Form using DT8179 Die and form joggle using DT8157 as per Dwg D3315 Rev: B 1806.08.03

7.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

20603.07

8.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

Weld hard surface using D3315-1T3 as per QSI 004 and Dwg D3315 Rev: B

Qty Part Number Description Batch

A/R N/A

7560 Hardcoat Rod

11100299

CPL 06.03.21

9.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

06/03/22

P70

(3)

(3)

10.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat Grey Sandtex (Ref: 4.3.5.6) as per QSI 005 4.3

DL 06/03/24

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT

CL06/03/24

(3)

12.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify on inside surface using a permanent fine point marker with the following:

TCCA-PDA, Dart Aerospace Ltd.

P/N: D3315-1, B/N: BXXXXX

For Product Eligibility see PDA04-17

and Stock



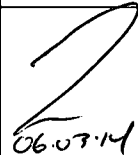
Location: ✓


PDA05-17

PH 06.03.09

CL06/03/24 (3)

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
06-03-14	8	Took 1x D3315-1 to make weld template D3315-1 T3  Inspected by:  06-03-14	CPC	06-03-14	1	 06-03-14	 06-03-14	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA:  Date: 06/03/29  
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 2/7/2006 12:13:02 PM  
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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: WEARPLATE

Job Number: 25725

Part Number: D33151

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0


DC

DOCUMENT CONTROL



③

Comment: DOCUMENT CONTROL  
Inspection Level 21

 06/13/24

Job Completion



U 06-03.24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



New Zealand Steel Limited  
Glenbrook, South Auckland  
Postal: Private Bag 92121, Auckland, New Zealand  
Telephones: (09) 375 8999 / 375 8111 Auckland  
(09) 235 8069 / 235 3535 Waiuku  
Fax: (09) 375 8959

# TEST CERTIFICATE

Ref: 5597/24541

CUSTOMER	Wilkinson	P50707DI002	SPECIFICATION	ASTMA1008 CS Type A	CERTIFICATE No	TC120140																		
CUSTOMER O/N	90-21N-830		PRODUCT	CRA WIDE COIL	PAGE	1 of 1																		
MILL O/N	497550		DIMENSIONS	0.044" x 48" x Coil	DATE	17 October 2005																		
PACK NUMBER	HEAT No	CHEMICAL COMPOSITION PERCENT															MECHANICAL TESTS (TEST SPECIFICATION - ASTMA370)							
		C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	Al	B	N2	CE( )	BEND	YIELD	T.S.	%ELONG	HARDNESS	r	LENGTH
		x100			x1000										x10000		x100	180°				G.L.=	HRB	( )
R9-467017-00	644043	5	TR	20	14	17	12	17	29	1	8	1	1					Good				52		1965
R9-467018-00	644043	5	TR	20	14	17	12	17	29	1	8	1	1					Good				52		1939
R9-467896-00	644286	5	TR	20	12	16	12	17	24	5	5	1	1					Good				49		2031
R9-467897-00	644286	5	TR	20	12	16	12	17	24	5	5	1	1					Good				49		1932
R9-467898-00	644286	5	TR	20	12	16	12	17	24	5	5	1	1					Good				58		2031
R9-467899-00	644286	5	TR	20	12	16	12	17	24	5	5	1	1					Good				50		1808
R9-468376-00	644291	5	TR	18	8	20	14	16	18	1	5	1	1					Good				45		1978
R9-468377-00	644291	5	TR	18	8	20	14	16	18	1	5	1	1					Good				45		1955

P.O 521

YIELD	GAUGE LENGTH (G.L.)			PLASTIC STRAIN RATIO (r)			IMPACT TEST			CARBON EQUIVALENT VALUE (CE)		
(A)=0.2% PROOF STRESS	(A)=200mm	(C)=80mm	(E)=2"	(A)=r0	(C)=r45	(B)=r90	(A)=10mm x 10mm	(C)=5mm x 5mm	(D)=2.5mm x 10mm	(A)=C+Mn/6	(C)=C+Mn/6+Si/24	(D)=
(B)=LOWER YIELD STRESS	(B)=50mm	(D)=5.65" So	(F)=8"	(B)=r90	(D)=(r0+r90+2/45)/4		(B)=7.5mm x 10mm	(D)=2.5mm x 10mm	(E)=5mm x 10mm	(B)=C+Mn/6+(Cr+V+Mo)/5+(Cu+Ni)/15		

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND INSPECTED  
WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION

APPROVED

*Aatish Misra*  
QC METALLURGIST



New Zealand Steel Limited  
Glenbrook, South Auckland  
Postal: Private Bag 92121, Auckland, New Zealand  
Telephones: (09) 375 8999 / 375 8111 Auckland  
(09) 235 8089 / 235 3535 Waiuku  
Fax: (09) 375 8999

# TEST CERTIFICATE

Ref: 5748/25184

Reissued 1/12/2005

CUSTOMER		Wilkinson										P50916DI001										SPECIFICATION										ASTMA1008 CS Type A										CERTIFICATE No										TC122435																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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<b>YIELD</b> (A)=0.2% PROOF STRESS (B)=LOWER YIELD STRESS	<b>GAUGE LENGTH (G.L.)</b> (A)=200mm (C)=80mm (E)=2" (B)=50mm (D)=5.65 So (F)=8"	<b>PLASTIC STRAIN RATIO (r)</b> (A)=r0 (C)=r45 (B)=r90 (D)=(r0+r90+2r45) / 4	<b>IMPACT TEST</b> (A)=10mm x 10mm (C)=5mm x 5mm (B)=7.5mm x 10mm (D)=2.5mm x 10mm (E)=5mm x 10mm	<b>CARBON EQUIVALENT VALUE (CE)</b> (A)=C+Mn/6 (B)=C+Mn/6+(Cr+V+Mo)/5+(Cu+Ni)/15 (C)=C+Mn/6+Si/24 (D)=
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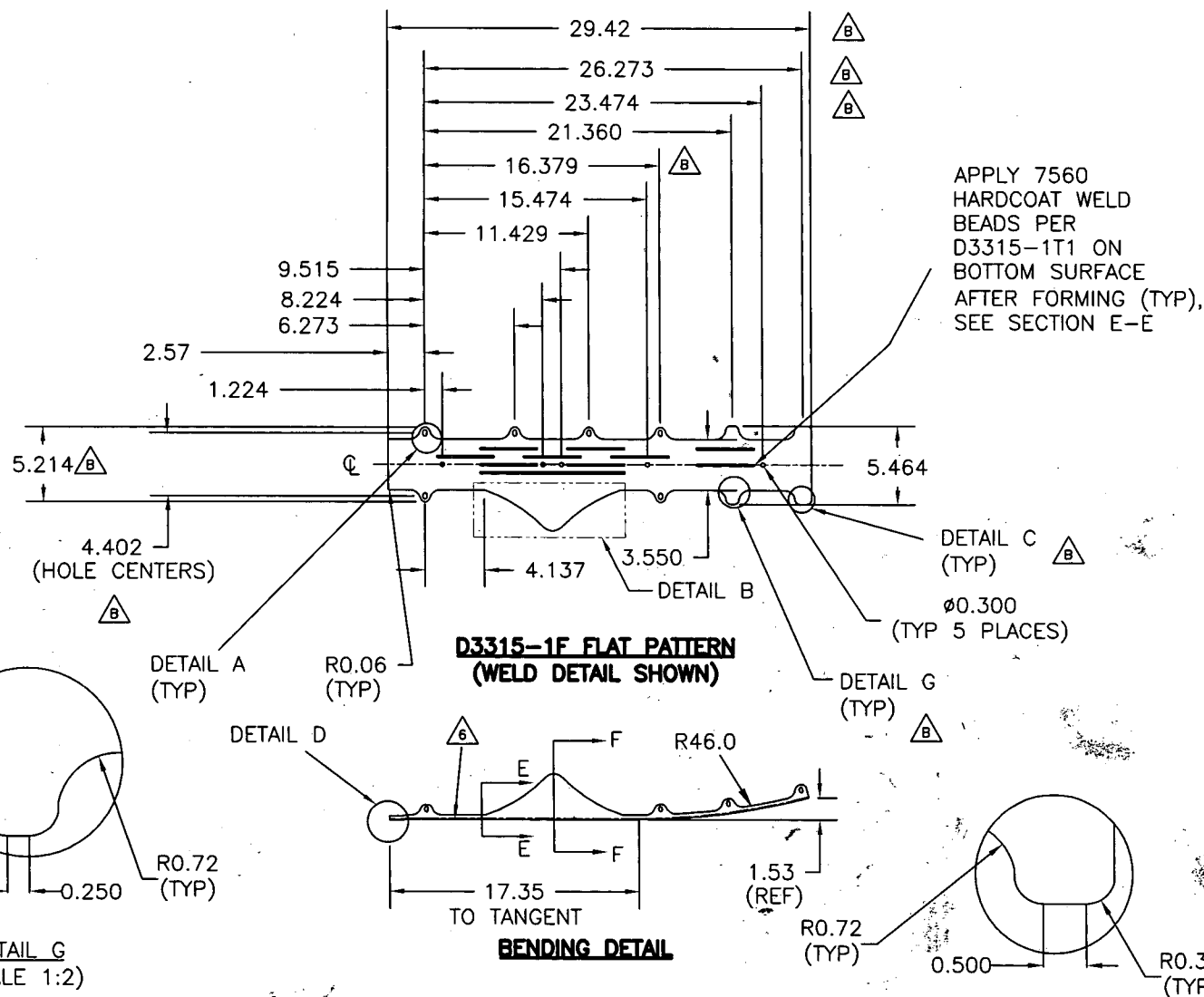
WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND INSPECTED  
WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION

APPROVED *Satish Misra*  
QC METALLURGIST

P50916DI001 (9) M INDUSTRIAL



**PROTOTYPE**  
PLEASE RETURN ALL ISSUED  
DATA TO ENGINEERING  
06.02.27



**D3315-1F FLAT PATTERN  
(WELD DETAIL SHOWN)**

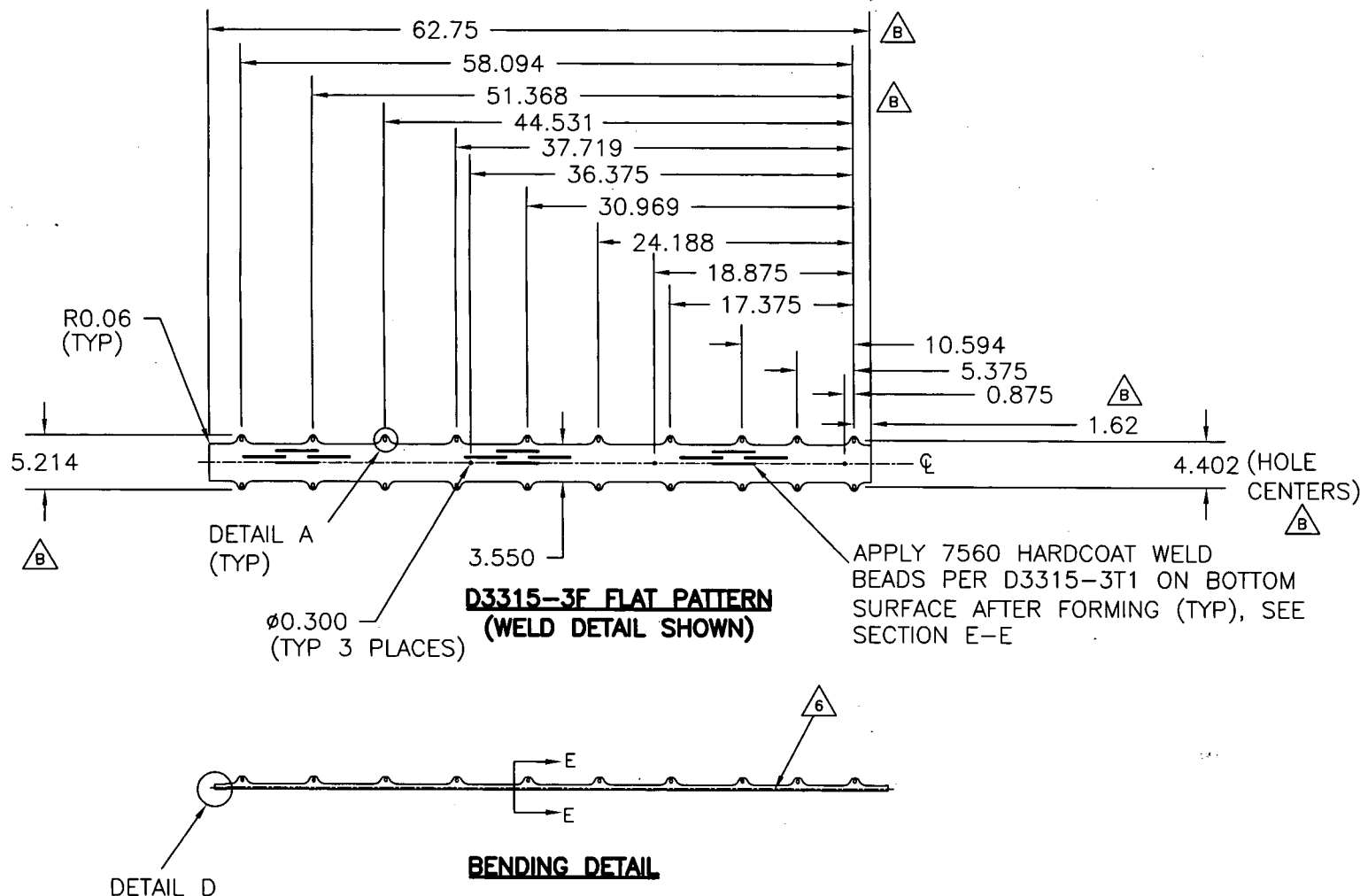
**BENDING DETAIL**

**D3315-1 WEARPLATE (SHOWN, -2 OPPOSITE)**

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 16 GAUGE (0.060 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) WELD. PER DART QSI 004
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:  
"TCCA-PDA, DART AEROSPACE LTD., P/N D3315-X  
B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-17"

DESIGN	DRAWN BY	DART AEROSPACE LTD
CHECKED	APPROVED	DRAWING NO. D3315
DATE 06.01.31	TITLE WEARPLATE	REV. B
A	04.09.10	NEW ISSUE
B	06.01.31	UPDATE DIMENSIONS
		SHEET 1 OF 4
		SCALE 1:12

**PROTOTYPE**  
PLEASE RETURN ALL ISSUED  
DATA TO ENGINEERING  
06.01.31

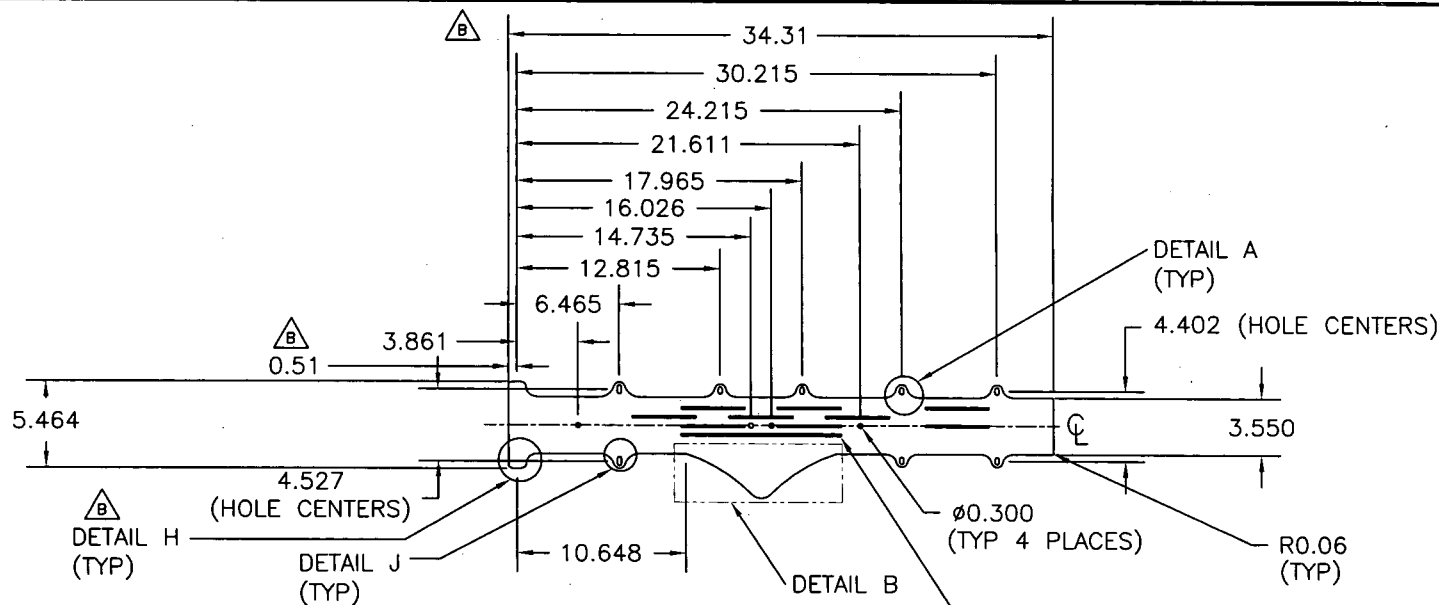


**D3315-3 WEARPLATE (SHOWN, -4 OPPOSITE)**

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 16 GAUGE (0.060 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) WELD PER DART QSI 004
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES
- 6) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:  
"TCCA-PDA, DART AEROSPACE LTD., P/N D3315-X  
B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-17"

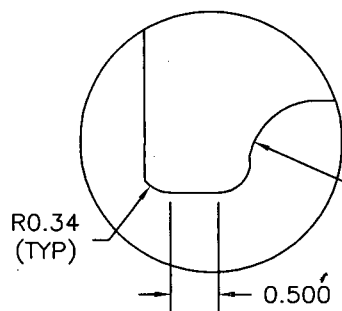
DESIGN	DRAWN BY	<b>DART AEROSPACE LTD</b>
CHECKED	APPROVED	HAWKESBURY, ONTARIO, CANADA
DATE	TITLE	REV. B
06.01.31	D3315	SHEET 2 OF 4
	WEARPLATE	SCALE 1:16

**PROTOTYPE**  
PLEASE RETURN ALL ISSUED  
DATA TO ENGINEERING  
06.02.37



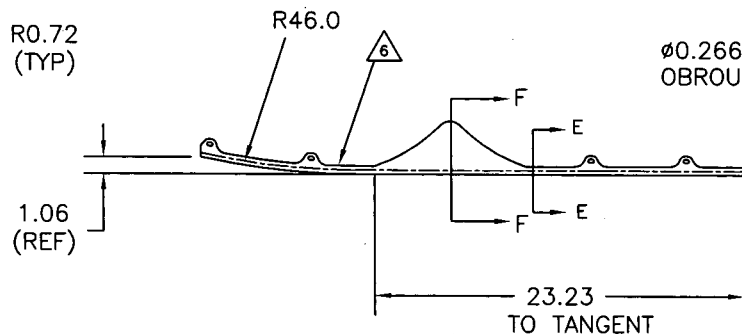
**D3315-5F FLAT PATTERN  
(WELD DETAIL SHOWN)**

APPLY 7560 HARDCOAT WELD  
BEADS PER D3315-5T1 ON BOTTOM SURFACE  
AFTER FORMING (TYP), SEE SECTION E-E



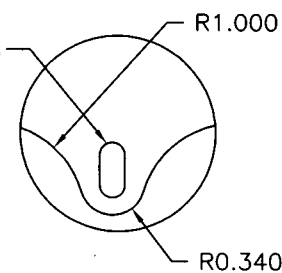
DETAIL H  
(SCALE 1:2)

R0.72  
(TYP)



**BENDING DETAIL**

Ø0.266 X 0.575  
OBROUND



DETAIL J  
(SCALE 1:2)

**D3315-5 WEARPLATE (SHOWN, -6 OPPOSITE)**

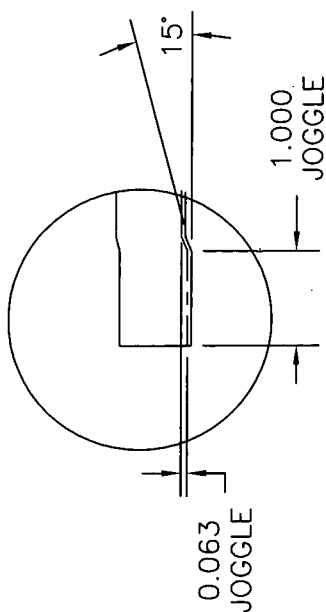
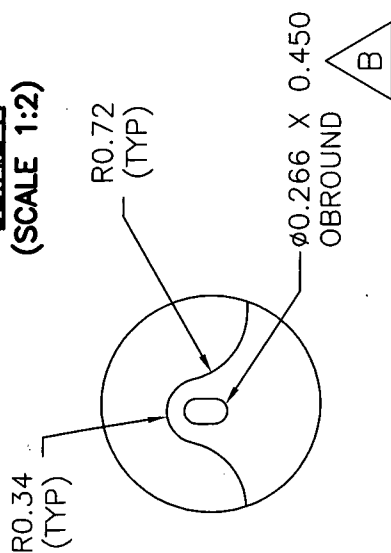
- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 16 GAUGE (0.060 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) WELD PER DART QSI 004
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSION ARE IN INCHES
- 6) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:  
"TCCA-PDA, DART AEROSPACE LTD., P/N D3315-X  
B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-17"

DESIGN	DRAWN BY	DART AEROSPACE LTD
CHECKED	APPROVED	HAWKESBURY, ONTARIO, CANADA
DATE	TITLE	REV. B
06.01.31	WEARPLATE	SHEET 3 OF 4
		SCALE 1:12

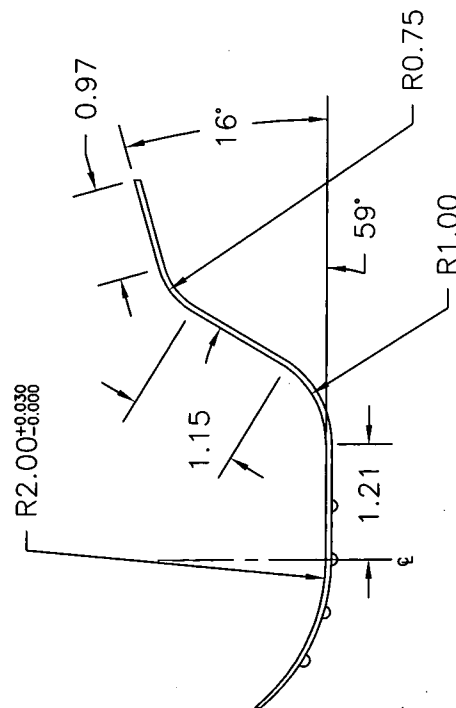
**PROTOTYPE**  
 PLEASE RETURN ALL ISSUED  
 DATA TO ENGINEERING  
 06-02.27 PH

DESIGN	DRAWN BY	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3315	REV. B SHEET 4 OF 4
DATE 06.01.31	TITLE WEARPLATE		SCALE NTS

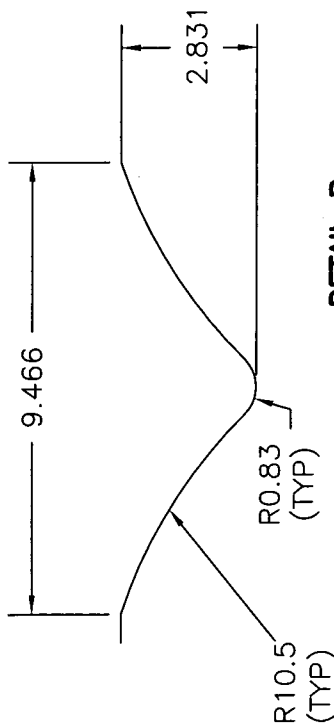
**DETAIL A**  
(SCALE 1:2)



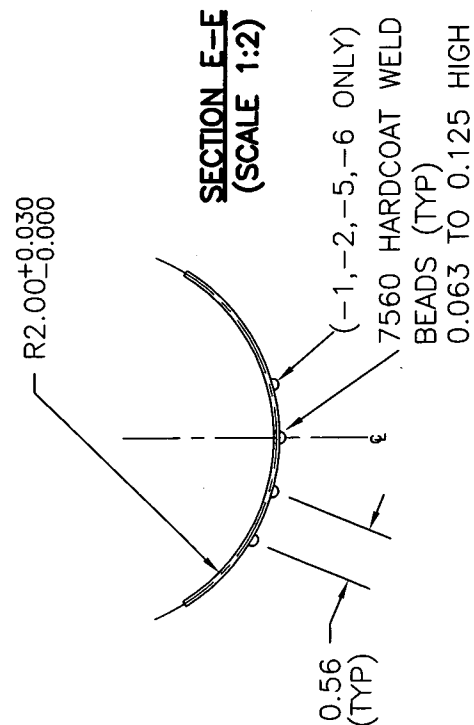
**DETAIL D**  
(SCALE 1:2)



**SECTION F-F**  
(SCALE 1:2)



**DETAIL B**  
(SCALE 1:4)



**SECTION E-E**  
(SCALE 1:2)

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